

SERVICE MANUAL

MODEL: EQ-825

inkel®

9007920890

**PUBLIC ADDRESS
RACK TYPE
GRAPHIC EQUALIZER**

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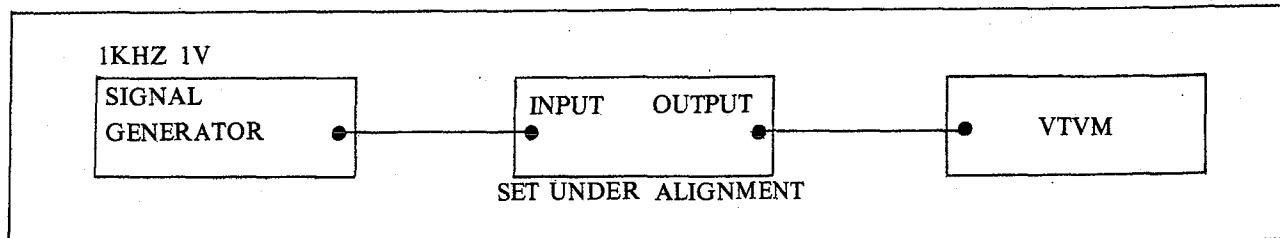
Electrical Adjustment Procedure

1. OUTPUT LEVEL ADJUSTMENT

A. SETTING

Function Switch:EQ, DEFEAT, NOTCH OFF

B. CONNECTION



C. ADJUSTMENT

Apply a 1KHZ input signal of 1V.

Adjust the SVR 601 so that output voltage is 1V.

Specifications

ELECTRICAL

| | |
|-----------------------------|--|
| Frequency Response | 20Hz to 20KHz \pm 1dB |
| Input Level | 0dB Balanced |
| Impedance | 8Kohm |
| Connectors | XLR Connector & PL-55 Jack |
| Output Level | 0dB Balanced |
| Impedance | 200 ohm |
| Connectors | XLR Connector & PL-55 Jack |
| Equalizer Level | \pm 12dB |
| Equalizer Frequency | 20, 15, 31.5, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1K, 1.25K, 1.6K, 2K, 2.5K, 3.15K, 4K, 5K, 6.3K, 8K, 10K, 12.5K, 16K, 20K |
| Notch Frequency Range | High ... 850 to 22,000Hz Low ... 16 to 1,500Hz |
| Notch Depth Control | 0 to -20dB |
| Signal to Noise Ratio | More than 89dB |
| T.H.D | Below 0.01% |

GENERAL

| | |
|-------------------------|---|
| Power Requirement | AC100V/120V/220V/240V, 50/60Hz |
| Power Consumption | 6W |
| Dimensions | 483(W) \times 89(H) \times 240(D)mm |
| Weight (Net) | 5Kg |

Parts List

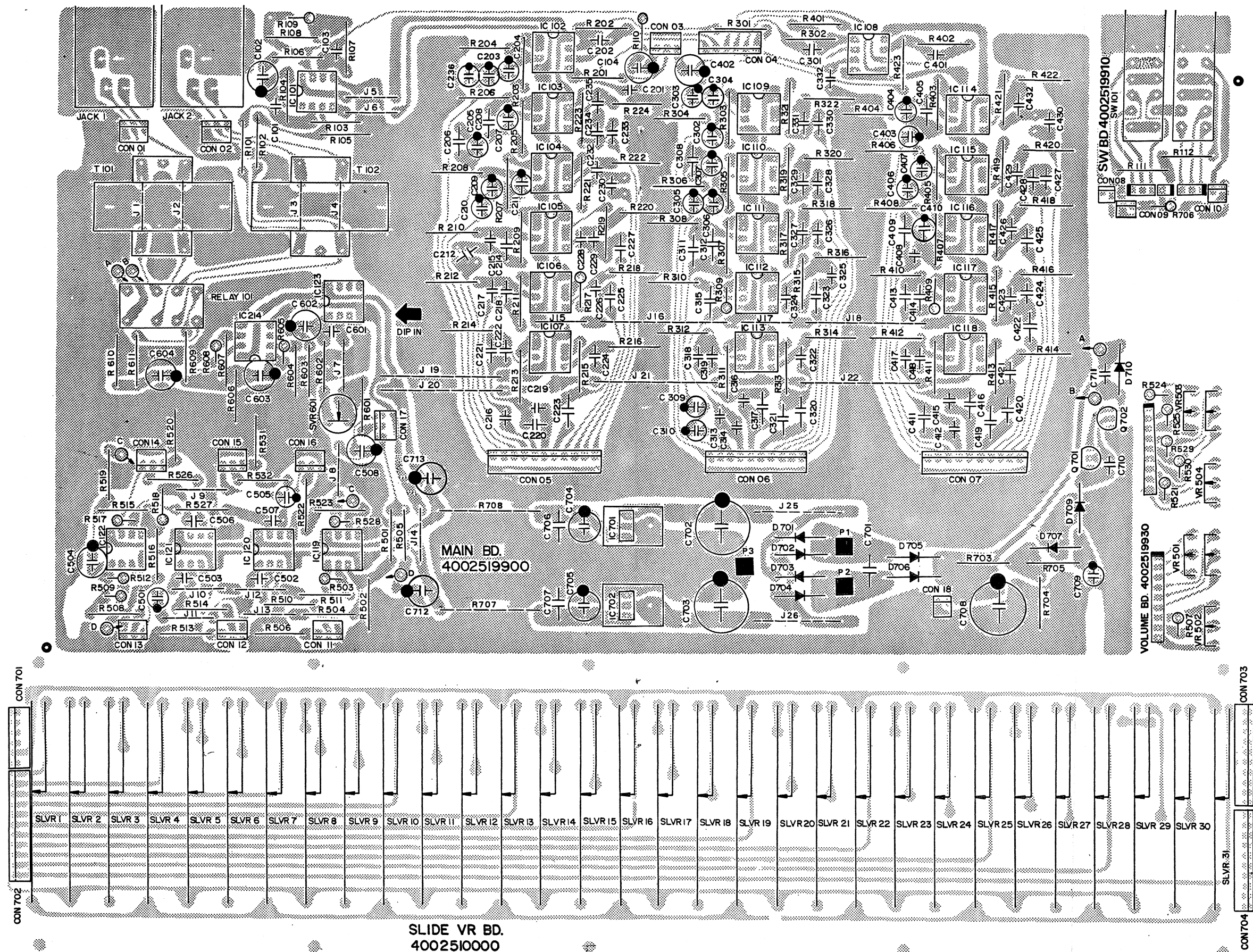
| Ref. No. | Parts No. | Description | Q'ty |
|--|------------|--------------------------------|------|
| 4002519901 MAIN B'D | | | |
| IC101~IC124 | 2168220100 | IC 4558P | 24 |
| IC701 | 2168630996 | IC 7818 | 1 |
| IC702 | 2168630997 | IC 7918 | 1 |
| D701~D706 D710 | 2058106100 | DIODE RECTIFIER IN4002 KEC | 7 |
| D707, D709 | 2058010100 | DIODE IN60 | 2 |
| Q701, 702 | 2082606107 | TR NPN 2SC 1815 | 2 |
| RELAY 101 | 5528001040 | RELAY RY-24Z TAKAMISAWA | 1 |
| JACK 1, 2 | 4438001110 | PHONE JACK (STEREO) | 2 |
| SVR 601 | 3248322320 | RES SEMI CS 22KB 10/5 | 1 |
| R701, R702 | 3039100372 | RES M.O 10 1W | 2 |
| R423 | 3009100273 | RES CF 10 $\frac{1}{4}$ W JN | 1 |
| R100 | 3009100275 | RES CF 10 $\frac{1}{4}$ W JR | 1 |
| R609, R611 | 3009101273 | RES CF 100 $\frac{1}{4}$ W JN | 2 |
| R607, R508 | 3009221273 | RES CF 220 $\frac{1}{4}$ W JN | 3 |
| R522 | | | |
| R608 | 3009221275 | RES CF 220 $\frac{1}{4}$ W JR | 1 |
| R317, R421 | 3009331273 | RES CF 330 $\frac{1}{4}$ W JN | 2 |
| R205, R207 | 3009391273 | RES CF 390 $\frac{1}{4}$ W JN | 5 |
| R319, R403 R417 | | | |
| R107, R221 | 3009471273 | RES CF 470 $\frac{1}{4}$ W JN | 6 |
| R405, R415 | | | |
| R419 R411 | | | |
| R605 | 3009471275 | RES CF 470 $\frac{1}{4}$ W JR | 1 |
| R315, R502 | 3009561273 | RES CF 560 $\frac{1}{4}$ W JN | 3 |
| R516 | | | |
| R200, R409 | 3009561275 | RES CF 560 $\frac{1}{4}$ W JR | 2 |
| R209, R213 | 3009681273 | RES CF 680 $\frac{1}{4}$ W JN | 9 |
| R219, R223 | | | |
| R303, R311 | | | |
| R321, R407 R413 | | | |
| R217 | 3009681275 | RES CF 680 $\frac{1}{4}$ W JR | 1 |
| R203, R211 | 3009821273 | RES CF 820 $\frac{1}{4}$ W JN | 6 |
| R215, R305 | | | |
| R307, R313 | | | |
| R309 | 3009821275 | RES CF 820 $\frac{1}{4}$ W JR | 1 |
| R704 | 3009102273 | RES CF 1K $\frac{1}{4}$ W JN | 1 |
| R105, R602, R506, R513 R520, R531 | 3009122273 | RES CF 1.2K $\frac{1}{4}$ W JN | 6 |
| R103 | 3009152273 | RES CF 1.5K $\frac{1}{4}$ W JN | 1 |
| R101, R102 | 3009392273 | RES CF 3.9K $\frac{1}{4}$ W JN | 2 |
| R501, R504 | 3009472273 | RES CF 4.7K $\frac{1}{4}$ W JN | 13 |
| R505, R511 R514, R515 R519, R523 R526, R527 R532, R510 R703 | | | |
| R503, R509 | 3009472275 | RES CF 4.7K $\frac{1}{4}$ W JR | 6 |

| Ref. No. | Parts No. | Description | Q'ty |
|--|------------|--------------------------------|------|
| R512, R517 R518, R528 | | | |
| R104 | 3009562273 | RES CF 5.6K $\frac{1}{4}$ W JN | 1 |
| R601 | 3009682273 | RES CF 6.8K $\frac{1}{4}$ W JN | 1 |
| R201, R202 | 3009103273 | RES CF 10K $\frac{1}{4}$ W JN | 7 |
| R301, R302 R401, R402 | | | |
| R106 | | | |
| R109 | 3009103275 | RES CF 10K $\frac{1}{4}$ W JR | 1 |
| R604 | 3009123273 | RES CF 12K $\frac{1}{4}$ W JN | 1 |
| R408 | 3009823273 | RES CF 82K $\frac{1}{4}$ W JN | 1 |
| R108, R204 | 3009104273 | RES CF 100K $\frac{1}{4}$ W JN | 16 |
| R210, R212 | | | |
| R216, R220 | | | |
| R224, R320 | | | |
| R410, R412 R414, R416 R420, R422 | | | |
| R603, R705 | | | |
| R206, R208 | 3009124273 | RES CF 120K $\frac{1}{4}$ W JN | 13 |
| R214, R218 R222, R308 R312, R314 R316, R318 R322, R406 R418 | | | |
| R304, R306 | 3009154273 | RES CF 150K $\frac{1}{4}$ W JN | 4 |
| R310, R404 | | | |
| R606, R610 | 3009474273 | RES CF 470K $\frac{1}{4}$ W JN | 2 |
| C233, C235 | 3609102120 | CAP M 0.001 μ F 100WV | 5 |
| C427, C428 C430 | | | |
| C330, C420 | 3609122120 | CAP M 0.0012 μ F 100W V | 2 |
| C230, C331 | 3609152120 | CAP M 0.0015 μ F 100W V | 4 |
| C506, C507 | | | |
| C228, C229 | 3609222120 | CAP M 0.0022 μ F 100W V | 5 |
| C219, C320 C328 | | | |
| C325 | 3609252120 | CAP M 0.0025 μ F 100W V | 1 |
| C232, C432 | 3609272120 | CAP M 0.0027 μ F 100W V | 2 |
| C227, C415 | 3609332120 | CAP M 0.0033 μ F 100W V | 3 |
| C425 | | | |
| C326, C429 | 3609392120 | CAP M 0.0039 μ F 100W V | 2 |
| C316, C412 | 3609472120 | CAP M 0.0047 μ F 100WV | 2 |
| C225, C234 | 3609562120 | CAP M 0.0056 μ F 100W V | 2 |
| C329, C422 | 3609682120 | CAP M 0.0068 μ F 100W V | 2 |
| C226, C323 | 3609822120 | CAP M 0.0082 μ F 100W V | 3 |
| C424 | | | |
| C423, C426 | 3609103120 | CAP M 0.01 μ F 100W V | 3 |
| C711 | | | |
| C223, C419 | 3609123120 | CAP M 0.012 μ F 100W V | 2 |
| C224, C321 | 3609153120 | CAP M 0.015 μ F 100W V | 4 |
| C324, C327 C221, C222 | 3609183120 | CAP M 0.018 μ F 100W V | 3 |

| Ref No. | Parts No. | Description | Q'ty |
|------------|------------|----------------------------|------|
| C322, C416 | 3609223120 | CAP M 0.022 μ F 100W V | 4 |
| C502, C503 | | | |
| C314, C317 | 3609273120 | CAP M 0.027 μ F 100W V | 4 |
| C319, C421 | | | |
| C217, C218 | 3609333120 | CAP M 0.033 μ F 100W V | 5 |
| C318, C418 | | | |
| C313 | | | |
| C216, C411 | 3609473120 | CAP M 0.047 μ F 100W V | 3 |
| C417 | | | |
| C206, C409 | 3609563120 | CAP M 0.056 μ F 100WV | 3 |
| C413 | | | |
| C215, C308 | 3609683120 | CAP M 0.068 μ F 100W V | 3 |
| C408 | | | |
| C212, C311 | 3609823210 | CAP M 0.082 μ F 100W V | 5 |
| C315, C405 | | | |
| C414 | | | |
| C208, C214 | 3609104120 | CAP M 0.1 μ F 100W V | 6 |
| C312, C701 | | | |
| C706, C707 | | | |
| C101 | 3509270130 | CAP C 27PF 50W V | 1 |
| C103 | 3509470130 | CAP C 47PF 50W V | 1 |
| C202, C301 | 3509151130 | CAP C 150PF 50W V | 4 |
| C332, C401 | | | |
| C201, C710 | 3509221130 | CAP C 220PF 50W V | 2 |
| C601 | 3509271130 | CAP C 270PF 50W V | 1 |
| C702, C703 | 3409247161 | CAP E 470 μ F 35V | 2 |
| C102, C104 | 3409210141 | CAP E 100 μ F 25V | 12 |
| C402, C504 | | | |
| C508, C602 | | | |
| C603, C604 | | | |
| C704, C705 | | | |
| C712, C713 | | | |
| C708 | 3409247061 | CAP E 47 μ F 35V | 1 |
| C709 | 3409222041 | CAP E 22 μ F 25V | 1 |
| C501, C505 | 3409210061 | CAP E 10 μ F 35V | 2 |
| C304 | 3409233971 | CAP E 3.3 μ F 50V | 1 |
| C204, C207 | 3409210971 | CAP E 1 μ F 50V | 5 |
| C303, C306 | | | |
| C404 | | | |
| C203, C209 | 3409247871 | CAP E 0.47 μ F 50V | 5 |
| C211, C302 | | | |
| C407 | | | |
| C305, C309 | 3409233871 | CAP E 0.33 μ F 50V | 3 |
| C403 | | | |
| C205, C210 | 3409222871 | CAP E 0.22 μ F 50V | 7 |
| C236, C307 | | | |
| C310, C406 | | | |
| C410 | | | |
| CON18 | 4428501010 | CONNECTOR WAFER LW 2P | 1 |
| CON01~03 | 4428598320 | CONNECTOR WAFER LW 3P | 10 |
| CON11~17 | | | |
| CON04 | 4428598350 | CONNECTOR WAFER LW 6P | 1 |
| CON06, 07 | 4428598390 | CONNECTOR WAFER LW 10P | 2 |
| CON05 | 4428598311 | CONNECTOR WAFER LW 11P | 1 |

| Ref No. | Parts No. | Description | Q'ty |
|------------------------------------|------------|--------------------------------------|------|
| P1~P3 | 4355997230 | CONNECTOR ASS'Y(3P) | 2 |
| | 4225000314 | PIN WRAPPING | 3 |
| | 7505200710 | HEAT SINK(REGULATOR TR.) | 2 |
| | 8019230081 | SCREW #2 PTC 3 \times 8Y | 4 |
| | 8319130011 | SPRING WASHER(ϕ 3) | 2 |
| | 4855000111 | CERAMIC PIPE | 4 |
| 4002519910 SUB SWITCH B'D | | | |
| VR501 | 3208097410 | VR ϕ 16 100KB \times 2 (15mm) | 1 |
| VR503 | 3208097310 | VR. ϕ 16 200KB \times 2(15mm) | 1 |
| VR502, 504 | 3208097710 | VR. ϕ 16 10KB(15mm) | 2 |
| R524, R525 | 3009273275 | RES CF 27K $\frac{1}{4}$ W JR | 4 |
| R529, R530 | | | |
| R507, R521 | 3009222275 | RES CF 2.2K $\frac{1}{4}$ W JR | 2 |
| | 4355985730 | CONNECTOR ASS'Y 3P(450mm) | 6 |
| 4002519930 SUB VOLUME B'D | | | |
| SW101 | 4628995810 | SW. PUSH P12.5 4 \times 4 | 1 |
| D708 | 2308060104 | LED KLR208E 2 \times 5 RD | 1 |
| D711, D713 | 2308220118 | LED SLR-34 UR3 | 2 |
| R111, R112 | 3009103273 | RES CF 10K $\frac{1}{4}$ W JN | 2 |
| R706 | 3009202275 | RES CF 2K $\frac{1}{4}$ W JR | 1 |
| CON8~10 | 4428501010 | CONNECTOR WAFER LW 2P | 3 |
| | 4353997120 | CONNECTOR ASS'Y 2P(200mm) | 1 |
| | 4353997130 | CONNECTOR ASS'Y 2P(80mm) | 2 |
| | 4355974110 | CONNECTOR ASS'Y 4P(400mm) | 1 |
| | 4355974010 | CONNECTOR ASS'Y 4P(450mm) | 1 |
| 4002510000 SLIDE VOLUME B'D | | | |
| SLVR1~31 | 3238097910 | SL VR 50KW L45 | 31 |
| CON701 | 4428598350 | CONNECTOR WAFER LW 6P | 1 |
| CON703, | 4428598390 | CONNECTOR WAFER LW 10P | 2 |
| CON704 | | | 1 |
| CON702 | 4428598311 | CONNECTOR WAFER LW 11P | 1 |
| | 4355977910 | CONNECTOR ASS'Y 6P | 1 |
| | 4355977810 | CONNECTOR ASS'Y 10P(A) | 1 |
| | 4355977710 | CONNECTOR ASS'Y 10P(B) | 1 |
| | 4355977610 | CONNECTOR ASS'Y 11P | 1 |
| PRIMARY FUSE | 5508211230 | NB 31.8mm 0.25A/250V KS FOR KS | 1 |
| PRIMARY FUSE | 5508211230 | NB 31.8mm 0.25A/250V KS FORUL CSA | 1 |
| PRIMARY FUSE | 5508210930 | NB 31.8mm 0.15A/250V KS FOR G-EUROPE | 1 |
| PRIMARY FUSE | 5508210930 | NB 31.8mm 0.15A/250V KS FOR BSI | 1 |

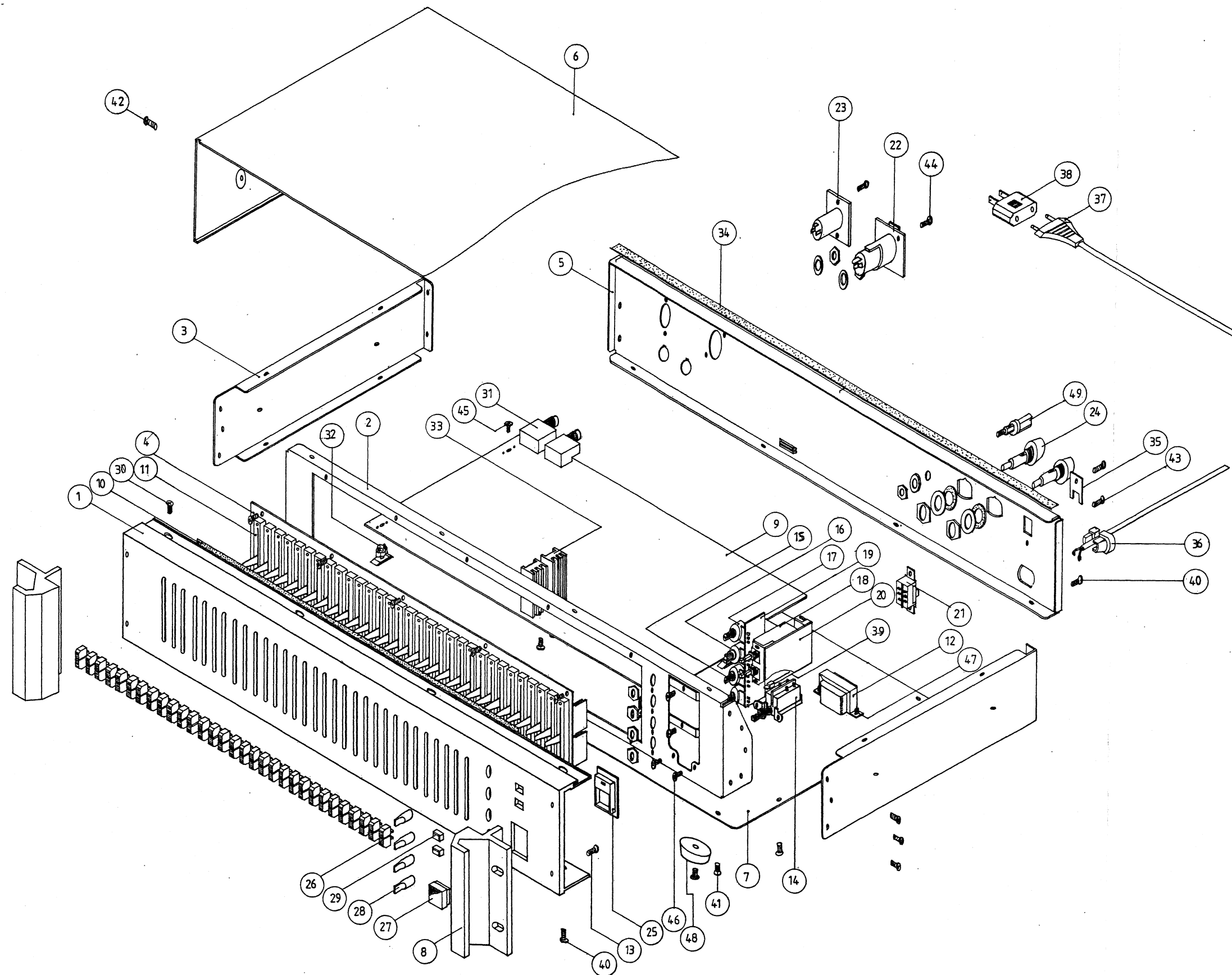
Top View of P.C. Boards



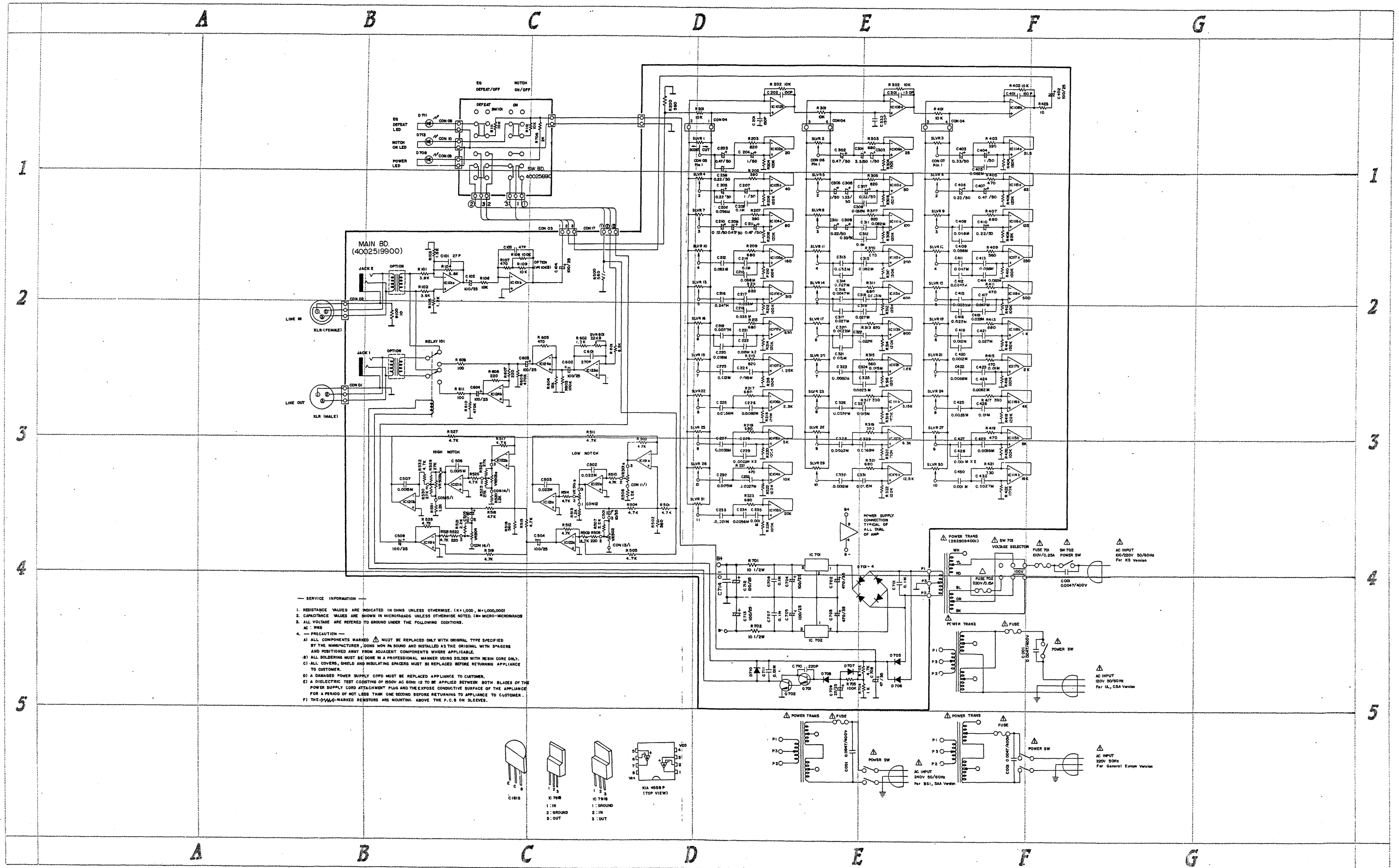
| No. | Description | Parts No. | Q'ty | Remarks |
|------|----------------------|--------------|------|-----------------------------|
| 1 | FRONT PANEL | 8602992110 | 1 | |
| 2 | FRONT CHASSIS | 6122492110 | 1 | |
| 3 | FRAME SIDE | 6123699320 | 2 | |
| 4 | SLIDE VR P·C·B | 4002510000 | 1 | |
| 5 | BACK CHASSIS | 6102993211 | 1 | FOR KS |
| 5-1 | BACK CHASSIS | 046102993223 | 1 | FOR UL,CSA |
| 5-2 | BACK CHASSIS | 04510299322 | 1 | FOR G EUROPE |
| 5-3 | BACK CHASSIS | 046102993231 | 1 | FOR BSI |
| 6 | COVER TOP | 6121099910 | 1 | |
| 7 | COVER BOTTOM | 6122492010 | 1 | |
| 8 | RACK MOUNT BASE | 8603999210 | 2 | |
| 9 | MAIN P·C·B | 4002519900 | 1 | |
| 10 | STRIP FELT | 3733999310 | 1 | |
| 11 | SLIDE VR 50KW L45 | 6238097910 | 31 | |
| 12 | POWER TRANS | 2828094000 | 1 | |
| 13 | SCREW BM4×10Y | 8009140101 | 4 | |
| 14 | POWER SWITCH | 4628005410 | 1 | FOR K.S.BSI G.EUR |
| 14-1 | POWER SWITCH | 4628004710 | 1 | FOR UL,CSA |
| 15 | VR ϕ 16 100KB×2 | 3268097410 | 1 | |
| 16 | VR ϕ 16 10KB | 3268097710 | 2 | |
| 17 | VR ϕ 16 200KB×2 | 3268097310 | 1 | |
| 18 | PUSH SWITCH | 4628995810 | 1 | |
| 19 | VOLUME P·C·B | 4002519930 | 1 | |
| 20 | SWITCH P·C·B | 4002519910 | 1 | |
| 21 | SELECTOR SWITCH | 4618000410 | 1 | FOR KS |
| 22 | XLR CONNECTOR | 4358999510 | 1 | |
| 23 | XLR CONNECTOR | 4358999610 | 1 | |
| 24 | FUSE HOLDER | 4458000220 | 2 | FOR KS |
| 24-1 | FUSE HOLDER | 4458000210 | 2 | FOR UL,CSA G·EUROPE, BSI |
| 25 | BEZEL PUSH | 8523999610 | 1 | |
| 26 | SLIDE KNOB | 8543002912 | 31 | |
| 27 | PUSH KNOB | 8545998710 | 1 | |
| 28 | VOLUME KNOB | 8545010210 | 4 | |
| 29 | PUSH KNOB | 8545998510 | 2 | |

[illegible]

Exploded View of Cabinet & Chassis



Schematic Diagram



Block Diagram

